

NON-PROVISIONAL APPLICATION FOR LETTERS PATENT

UNITED STATES OF AMERICA

Be it known that I, **BEN LEE**, residing at **4062 Hickory Fairway Drive, Woodstock, Georgia**, a citizen of the United States of America, have invented certain new and useful improvements in a

**COMBINATION MINIATURE CAMERA AND CAP FOR HANDS FREE VIDEO
AND METHOD THEREFOR**

of which the following is a specification:

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**COMBINATION MINIATURE CAMERA AND CAP FOR HANDS FREE VIDEO
AND METHOD THEREFOR**

CROSS-REFERENCES TO RELATED APPLICATIONS

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This application claims priority to, and the full benefit of, Provisional Application No. 60/448,765, filed February 20, 2003, entitled "Combination Miniature Camera and Cap for Hands Free Video and Method Therefor".

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TECHNICAL FIELD

The present invention relates generally to video cameras, and more specifically to a miniature camera for hands free video, wherein the present invention is particularly useful for, although not limited to assisting sportsmen to capture video while leaving their hands free for other tasks.

BACKGROUND OF THE INVENTION

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Many sportsmen are now taking their camcorders into the wilderness in the hopes of filming wildlife as they sit and wait for their desired game. However, current technology

requires that the sportsman hold a camcorder device in his hand while filming, thus occupying his hands and hindering expeditious deployment of archery equipment or a desired firearm for harvesting sighted game.

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Additionally, many other sports participants are unable to operate video camcorders while actually participating in a sports activity, such as skate-boarding, cycling or roller-blading, wherein any attempts to do so could result in injury to the participant and/or damage to the video equipment. Furthermore, it would be difficult for the sports participant to hold a camcorder and concentrate on filming, while at the same time trying to participate in the sporting activity.

15 The present invention began out of a need for a device to allow sportsmen to film with a video camera without the necessity of using their hands or focusing their eyes on the subject of the film. By fulfilling such a need, the present invention reduces the risk of injury to a sporting participant or, alternately, allows them to operate other equipment, or both.

Although various camera devices and methods are known, all are disadvantageous when compared to the present invention. Such known devices and methods include helmet-mounted cameras for race car drivers and football players.

5 However, such devices are only suitable for use where it is not necessary to camouflage the appearance of the camera, and offer no ability to provide undetected operation.

Small cameras, typically on the order of two to three
10 inches in size, are also available for the security industry. However, such security cameras are not camouflaged, relying instead on being hidden inside or behind screening partitions.

United States Patent No. 5,583,571 to Friedland teaches a
15 hands-free video recording system that requires an elastic strap with a rigid member for attachment to a desired object, or alternately, that may be attached to a helmet for recording the line-of-sight of the user. However, the device of Friedland is disadvantageous, as it lacks the requisite
20 camouflage to conceal the camera for inconspicuous presence of a hunter, sportsman, or the like, in a wilderness or outdoor setting.

United States Patent No. 6,292,213 to Jones teaches a method for use by athletes or others to record their activities via a camera attached to a base support, such as a headband, goggles or helmet structure in or about the user's person, for transmission of a signal to a central receiver. The method of Jones is disadvantageous in that it lacks camouflage and may be readily observed.

United States Patent No. 5,128,807 to Blackmon teaches a monocular device for magnification of view, wherein the device is mounted on a headgear unit. The device of Blackmon is disadvantageous as it cannot record the images viewed and further lacks camouflage.

While some of the above referenced inventions may well be used for filming activities, they fail to adequately provide camouflage and are further often bulky in nature.

Therefore, it is readily apparent that there is a need for a miniature camera for hands free video. The present invention builds on existing miniature security cameras by camouflaging them for use by hunters and other sportsmen for video surveillance in the field. Such a miniature bullet

camera may be connected to a camcorder through the input/output RCA connectors that are standard for this technology. The camcorder and battery pack may be carried by the sportsman into the field in a camouflaged back or belt pack, or similar carrying device.

BRIEF SUMMARY OF THE INVENTION

Briefly described, the present invention overcomes the above-mentioned disadvantages and meets the recognized need for such a device by providing a miniature camera for hands free video for use by sportsmen to film game, yet which still allows the user's hands to remain free for utilization of archery equipment or firearm of choice for hunting purposes. The present invention further permits participants in other sports to film their activities while remaining free to mentally and physically concentrate on their activity, without the need to attend to their camera device.

According to its major aspects and broadly stated, the present invention is a camera device which is connected via cabling means to a camcorder or other suitable recording device, powered by a battery pack.

More specifically, the present invention in its preferred embodiment is a miniature bullet camera that is camouflaged to blend in with a hunter's personal environment, wherein the device attaches to a hat or other article of clothing, sporting implement or accessory, via a clasp, a pin, hook-and-loop fasteners, stitching or glue adhesives.

The present invention relates to a device that could be utilized by a hunter in pursuing game, wherein the hunter is able to film the game, and the pursuit of same, from a hidden location without drawing attention to the camera or the hunter himself.

A feature and advantage of the present invention is its ability to allow operation without the need to utilize hands.

A further feature and advantage of the present invention is that it is suitable for participant sports, enabling full attention to be focused on the activity without the need of utilizing a traditional viewfinder.

A feature and advantage of the present invention is its miniature size, thus facilitating its camouflage within clothing.

5 A feature and advantage of the present invention is its ease of manufacture and low production costs.

A further feature and advantage of the present invention is its ease of operation.

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A further feature and advantage of the present invention is its ability to be installed and set up by someone other than the ultimate user, thus allowing one person to prepare the device for use by another.

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Still another feature and advantage of the present invention is its ability to record a user's activities for future recall.

20 These and other objects, features and advantages of the present invention will become more apparent to one skilled in the art from the following description and claims when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Having thus described the invention in general terms, the present invention will be better understood by reading the Detailed Description of the Preferred and Selected Alternate Embodiments with reference to the accompanying drawing figures, which are not necessarily drawn to scale, and in which like reference numerals denote similar structures and refer to like elements throughout, and in which:

FIG. 1A is a perspective view of the device according to a preferred embodiment of the present invention.

FIG. 1B is a side view of the device according to a preferred embodiment of the present invention.

FIG. 2 is a perspective view of the device according to a preferred embodiment of the present invention, detailing the camera holder component of **FIG. 1A**.

FIG. 3 is a perspective view of the camera device of a preferred embodiment of the present invention with connecting cabling.

DETAILED DESCRIPTION OF THE PREFERRED
AND SELECTED ALTERNATIVE EMBODIMENTS

In describing the preferred and selected alternate
5 embodiments of the present invention, as illustrated in the
Figures, specific terminology is employed for the sake of
clarity. The invention, however, is not intended to be
limited to the specific terminology so selected, and it is to
be understood that each specific element includes all
10 technical equivalents that operate in a similar manner to
accomplish similar functions.

The present invention is suitable for use by hunters and
other outdoor sportsmen for video filming their view without
15 the need for hand operation. Additionally, the device may be
utilized by participants in any sporting or other physical
activity requiring the operation of a device without the use
of hands.

20 Referring now to **FIGS. 1A** and **1B**, camera apparatus **10** is
preferably a cap or hat **100** that may be worn by a sportsman,
wherein a sportsman is preferably defined as anyone pursuing
an activity generally considered to be sporting in nature,

such as, for exemplary purposes only, hunting, bird watching, game photographing, hiking, mountain climbing, skiing, and similar activities. Hat 100 preferably has thereon first camouflage color 110 and second camouflage color 120, 5 preferably in a suitable pattern on hat 100 to assist in blending into the sportsman's chosen environment.

Hat 100 preferably further has bill 130, extending from base 105 thereof, as is known in the art. Preferably located 10 on bill 130 is camera holding body 140, such as for exemplary purposes only, a sleeve or tube, having micro bullet camera 145 contained therein, where micro bullet camera 145 is preferably a video camera. Camera holding body 140 is preferably removably secured to bill 130 via attachment means 15 150, preferably in the form of a clip, although other suitable fastening mechanisms could be utilized, such as, for exemplary purpose only, clasps, glue, sewing means, or hook-and-loop fasteners. Alternatively, camera holding body 140 may be permanently secured to bill 130 via permanent attachment 20 means, such as, for exemplary purposes only, gluing or stitching.

Preferably extending from micro bullet camera **145** is cabling **160**, wherein cabling **160** is preferably routed along bill **130** to rear **107** of hat **100**, such that cabling **160** preferably passes rearward and proximate base **109** of hat **100**,
5 continuing behind the head of the wearer, and thereafter, passing unobserved behind the wearer to a rearward location, such as, for exemplary purposes only, a back pack or belt pack preferably having a conventional recording device therein. Cabling **160** is further in electrical communication with micro
10 bullet camera **145** and the conventional recording device. Attachment means **150**, micro bullet camera **145**, and cabling **160** are all preferably colored with a camouflage pattern.

It is contemplated that micro bullet camera **145** could
15 contain one or more integrated microphones for audio signal capture and transformation or, alternatively, one or more external microphones.

Referring now to **FIG. 2**, illustrated therein is camera
20 holder **20**, preferably comprised of camera holding body **140** in the form of elastic sleeve **205**. Camera holding body **140** preferably possesses thereon first camouflage color **180** and second camouflage color **190**, preferably forming a suitable

pattern to assist camera holding body **140** to blend with the personal environment of the wearer. Camera holding body **140** is preferably located on bill **130** of hat **100** such that first end **200** of camera holding body **140** is directed forward, and
5 second end **210** of camera holding body **140** is directed to rear **107** of hat **100**. Micro bullet camera **145** is preferably placed into camera holder **20** to reside in camera holding body **140** by inserting through second end **210**, such that the front of micro bullet camera **145** extends through camera holder **20** to first
10 end **200**. Thusly, cabling **160** will trail and be in position such that it may be routed to the rear of hat **100**. Alternately, it will be recognized by those skilled in the art that cabling **160** could be inserted through first end **200**, passing through camera holding body **140** and exiting through
15 second end **210**. Micro bullet camera **145** could then be placed into camera holder **20** by inserting into first end **200** until lens **270** of micro bullet camera **145** resides generally flush with first end **200**.

20 **FIG. 3** shows in greater detail micro bullet camera assembly **30** having micro bullet camera **145** and camera holding body **140**, wherein micro bullet camera **145** has appropriate functional cabling **160** connected thereto, and wherein camera

holding body **140** preferably has first end **200**, second end **210** and body section **240**. Camera holding body **140** preferably has thereon first camouflage color **180** and second camouflage color **190**, preferably selected to blend into the environment of use.

5 Preferably located at first end **200** is camera lens **270**, through which micro bullet camera **145** views the surroundings. Cabling lead **280** preferably exits proximal second end **210**, wherein lead **280** carries a signal obtained by micro bullet camera **145** to a recording device. Cabling lead **280** is
10 preferably colored in camouflage colors **180** and **190**, and contains patterns similar to those on camera holding body **140**.

Cabling lead **280** is preferably approximately three to six feet in length and terminates in wire exit connector **290**, from
15 which preferably extend three wires **302**, **312** and **322**. Wires **302**, **312**, **322** each preferably carry different signals, and further preferably terminate in video signal wire housing **300**, audio signal wire housing **310**, and power supply wire housing **320**, respectively. Video signal wire housing **300** has therein
20 video signal wire plug **330** for electrical communication to video input of a recording device. Audio signal wire housing **310** has therein audio signal wire plug **340** for electrical communication to audio input of a recording device. Power

supply wire housing **320** has therein power supply wire plug **350** for obtaining power for micro bullet camera **145** from a recording device. Video signal wire plug **330**, audio signal wire plug **340** and power supply wire plug **350** are preferably
5 RCA type plug connectors; although other suitable connectors could be utilized, such as, for exemplary purposes only, s-video, other digital or analog feeds, composite video and component video.

10 It is envisioned that device **10** could alternatively be suited to wireless operation, wherein micro bullet camera **145** could have therein a radio or other rf or emf transmitter for communicating through transmission of frequencies to a receiving device mounted remotely, either on the person of the
15 user or at a separate location. In such a case, micro bullet camera **145** would require a separate source of power, such as a battery, or the like.

In another alternative embodiment, device **10** could be
20 incorporated into a vehicle or into some article that may be carried by an individual, where such an article has an entirely separate function unrelated to filming. It could

further, through the use of appropriate camouflage colors, be blended into shrubbery, turf or rocky surroundings.

In yet another alternative embodiment, a still camera
5 could be incorporated into device **10**, operated at the command of the wearer through an appropriate control mechanism.

It is further envisioned that an alternative embodiment could include a plurality of cameras, so that the field of
10 vision could be increased.

It is contemplated that night vision camera equipment could be utilized, thus providing a full range of reduced light photography.
15

It is further contemplated that device **10** could include the ability to zoom nearer and farther from the object of view.

20 It is also contemplated that device **10** could be positioned to observe rearward, by securing on the rear of hat **100**.

In yet another contemplated embodiment, device **10** could include a means of illumination, for use when ambient light conditions require more illumination for adequate quality of recorded view.

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The foregoing description and drawings comprise illustrative embodiments of the present invention. Having thus described exemplary embodiments of the present invention, it should be noted by those skilled in the art that the within
10 disclosures are exemplary only, and that various other alternatives, adaptations, and modifications may be made within the scope of the present invention. Merely numbering or listing the steps of a method in a certain order does not constitute any limitation on the order of the steps of that
15 method. Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Although specific terms may be employed herein,
20 they are used in a generic and descriptive sense only and not for purposes of limitation. Accordingly, the present invention is not limited to the specific embodiments

illustrated herein, but is limited only by the following claims.